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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,733	06/20/2006	Fabian Doling	P23272	8636
40401	7590	10/03/2008	EXAMINER	
HersHKovitz & Associates, LLC			HUG, ERIC J	
2845 Duke Street			ART UNIT	
Alexandria, VA 22314			PAPER NUMBER	
			1791	
			NOTIFICATION DATE	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USPTO@hershkovitz.net  
patent@hershkovitz.net

<b>Office Action Summary</b>	<b>Application No.</b> 10/583,733	<b>Applicant(s)</b> DOLING, FABIAN	
	<b>Examiner</b> Eric Hug	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2006 and 12 April 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 and 26-47 is/are rejected.
- 7) ☒ Claim(s) 18-25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/12/2007</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 4, 12, 15, 26, 28, 29, and 43 are rejected under 35 U.S.C. 102(b) as being anticipated by Niskanen (US 5,240,564).

Niskanen discloses a method for controlling the nip pressure profile in the press section of a paper machine. The method regulates the temperature profiles of the press rolls which form the nip, therein regulating the thermal expansion of the rolls. The temperature profiles of the rolls is regulated by applying fluid directly onto the outer surface of the rolls. An array of jets arranged in the axial direction of the roll (along its length) applies the fluid. The temperature of each jet is individually controlled. See Figure 2. A jet pipe 21 is divided into sections 21-1 to 21-N. Each section has a nozzle 27 directed to the roll surface, and each section communicates to control unit 20. Fluid passes through each nozzle. The flow and temperature of fluid through each nozzle is adjustable in order to control the temperature profile. See also column 4, line 40 to column 5, line 2. Air may be used as the fluid. See column 5, lines 19-38.

Thus, regarding claim 1, Niskanen teaches heating a roller used in the production of a material web from the outside by a heated gas. Regarding claims 4 and 15, the teachings of Niskanen encompass zone heating of the roll, wherein heating within each

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zone is independently adjusted. Regarding claim 12, the air mass flow rate is one variable for controlling the roll temperature. Regarding claims 26, 28, 29, and 43, the individually controlled sections 21-1 to 21-N correspond to the claimed axial zones and the air delivered to those sections corresponds to at least the claimed first, second, and third heated gases.

2. Claims 1-3, 5, 8-10, and 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Wahren (US 4,324,613).

Wahren discloses a press for a fibrous web comprising two rolls of which one is heated. The heated roll is heated along its surface by hot gases from a fuel combustion burner. Liquid, pulverized, or gaseous fuel may be use (col. 2, lines 29-42). Figure 1 shows a press roll arrangement with heated roll 1 and suction press roll 2. A combustion chamber is located at the exterior of heated roll 1. Gas burners 6 are disposed in combustion chamber 8 and are supplied with fuel through pipe 7. Combustion gases from burners 6 pass directly to the surface of press roll 1. See column 3, lines 5-27. An exhaust hood 11 is also provided about roll 1. Here burners may also be provided. See column 3, line 65 to column 4, line 2.

Thus, regarding claim 1, Wahren teaches heating a roller used in the production of a material web from the outside by a heated gas. Regarding claim 2, Wahren teaches using fuel gas burners arranged near the roller surface. Regarding claim 3, the combustion gases emerging from the burner act on the roll surface. Regarding claim 5, several burners are disposed along the length of the roll. Regarding claim 8, fuel gas is one possible fuel for the burners. Regarding claim 9, a mixture of fuel and air is deemed

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inherently necessary in a combustion burner. Regarding claim 10, pipe 7 is upstream of the combustion zone. Regarding claims 12-14, the relative fuel and air mass flow rates are deemed to be necessarily adjustable for controlling combustion burners.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 6, 7, 11, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wahren in view of Ledjeff (US 5,810,577).

As described above, Wahren discloses a press for a fibrous web comprising two rolls of which one is heated. The heated roll is heated at its surface by hot gases from a fuel combustion burner. Liquid, pulverized, or gaseous fuel may be use. Wahren has been applied above to the features of claims 1 and 2. Regarding claims 6, 7, and 11, Wahren does not disclose the use of a catalytic burner. Regarding claim 16, Wahren does not disclose the use of hydrogen as fuel, although hydrogen falls under the broader disclosure of a gas. Regarding claim 17, Wahren does not disclose the use of natural gas as fuel, although natural gas also falls under the broader disclosure of a gas.

Ledjeff is cited here to exemplify that combustion burners of the catalytic type are well known in the art. The catalyst of a catalytic burner may be applied as a coating to a carrier porous to the fuel gas. See column 3, lines 26-47. Ledjeff also exemplifies the known use of fuels such as hydrogen gas or natural gas in combustion burners,

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particularly catalytic combustion burners. It would have been obvious to one skilled in the art to utilize a catalytic burner as the combustion burner of Wahren because a catalytic burner is more stable, has a higher degree of efficiency, and produce fewer emissions than a corresponding flame-type burner. It also would have been obvious to choose a suitable fuel for the burner, such as hydrogen or natural gas, that provides the most effective and/or efficient heating.

4. Claims 4 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wahren in view of Niskanen.

As described above, Wahren discloses a press for a fibrous web comprising two rolls of which one is heated. The heated roll is heated at its surface by hot gases from a fuel combustion burner. Liquid, pulverized, or gaseous fuel may be use. Wahren does not disclose independent adjustment and control of the heating in zones in the axial direction

As described above, Niskanen discloses a method for controlling the nip pressure profile in the press section of a paper machine by regulating the temperature profiles of the press rolls which form the nip. The temperature profiles of the rolls is regulated by applying fluid directly onto the outer surface of the rolls via an array of jets arranged in the axial direction of the roll. The flow and temperature of fluid through each nozzle is adjustable in order to control the temperature profile. Thus, Niskanen teaches control of the roll temperature through independent adjustment of heating in the axial direction in order to equalize the press nip profile and to equalize the moisture profile of a web

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compressed and heated in the nip. It would have been obvious to one skilled in the art to implement zonal control of the burners in Wahren for the same reasons.

5. Claims 27, 30-42, and 44-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Niskanen in view of Wahren and Ledjeff.

Niskanen, as applied to claims 26, and 43 above, discloses a method for controlling the nip pressure profile in the press section of a paper machine by regulating the temperature profiles of the press rolls which form the nip. The temperature is regulated in zones by applying fluid directly onto the outer surface of the rolls via an array of jets arranged in the axial direction of the roll. The flow and temperature of fluid through each nozzle is adjustable in order to control each individual zone temperature. Niskanen does not disclose the use of fuel combustion burners.

Wahren discloses a press for a fibrous web comprising two rolls of which one is heated. The heated roll is heated at its surface by hot gases from a fuel combustion burner. Liquid, pulverized, or gaseous fuel may be use. Fuel combustion burners provide large amounts of direct heat simply and inexpensively. Fuel combustion burners also provide rapid drying of a web. It would have been obvious to one skilled in the art to use fuel combustion burners as a source of direct heat in Niskanen for at least the same reasons. The use of burners would also provide efficient exchange of heat to the surface of the press roll as desired by Niskanen.

The features of the dependent claims not taught by Niskanen or Wahren are taught by Ledjeff. Ledjeff exemplifies that combustion burners of the catalytic type are well known in the art. The catalyst of a catalytic burner may be applied as a coating to a

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carrier porous to the fuel gas. See column 3, lines 26-47. Ledjeff also exemplifies the known use of fuels such as hydrogen gas or natural gas in combustion burners, particularly catalytic combustion burners. It would have been obvious to one skilled in the art to utilize a catalytic burner as the combustion burner of Wahren because a catalytic burner is more stable, has a higher degree of efficiency, and produce fewer emissions than a corresponding flame-type burner. It also would have been obvious to choose a suitable fuel for the burner, such as hydrogen or natural gas, that best provides the most effective and/or efficient heating.

***Allowable Subject Matter***

Claims 18-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claims 18 and 19 are allowable for providing that the burner is in an air-moving chamber and air flowing over the burner is mixed with burner waste gas for heating the roller.

Claims 20-25 are allowable for providing hot gas generated from the burner is mixed with cold air to generate the heated gas that is used for heating the roller.



Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Hug whose telephone number is (571) 272-1192.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric Hug/  
Primary Examiner, Art Unit 1791